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co-operation; and to this letter has been appended a statement, setting forth the objects of the proposed organization.

"Your Council have only to add their expectation, that the preliminary arrangements will be completed in two months from the present time, and that the regular series of observations may be commenced on the 1st of July."

The President communicated some notes on the storm which visited Dublin on the 18th April last.

"Having watched attentively the progress of the late storm from a favourable position, and collected some facts relative to it from the records of the Observatory, and from other sources, I avail myself of the present opportunity to lay them before the Academy. The phenomena were of a nature so unusual (I may say unexampled) in these climates, that it is desirable that some notice of them, however imperfect, should be placed on record; and the present summary of facts is offered, chiefly in the hope that it may serve as a nucleus to a more complete one. I shall limit myself, mainly, to those which have an immediate scientific bearing.

"The morning of the 18th was fine in Dublin, with bright sunshine, light cirrous clouds being scattered loosely over the sky; at ten o'clock these became diffused, and the sky was evenly, but lightly overcast.

"From the tracings of the self-registering anemometer, erected in Trinity College, it appears that on the 17th, and during the morning of the 18th, the wind blew gently from the south-west. Towards noon, on the latter day, it gradually veered to the south, and continued at that point until the arrival of the storm. This veering of the wind, however, appears to have been confined to the lower current; the direction of the upper current, as estimated by the motion of the clouds, appeared to be nearly south-west.

"The first indications of the approach of the storm were observed soon after three o'clock. Massive *cumuli* were seen in the western and south-western portion of the horizon. These became denser as they approached, until they formed a mass of an ash-grey colour, projected on a sky of a paler tint, while the rugged outliers from the mass, of the peculiar form which indicates a high degree of electrical tension, showed plainly that a storm was approaching. About half-past three o'clock it burst forth. The flashes of lightning (generally forked) succeeded one another with rapidity, and at length the roar of the thunder seemed continuous. Some persons who observed the phenomena from a distance were able to distinguish the two strata of oppositely electrical clouds, and to see the electrical discharges passing between them.

" Hitherto the wind was light, and there was that peculiar closeness in the air which is the result of high temperature and excessive humidity. Shortly before four o'clock the rain commenced; this was followed almost immediately by discharges of hail, and at four, P. M., the terrific tornado, which was the grand and peculiar feature of this storm, reached us.

" This gale, which appears to have been a true whirlwind, first sprung up from the south-east, driving the hail before it impetuously. It then suddenly, and apparently in an instant, shifted to the point of the compass diametrically opposite, and blew with increased violence from the north-west. The noise about this time of the shifting of the wind was terrific, and arose (as is conjectured respecting similar tropical phenomena) from the confused conflict of hail in the air. The size of the hailstones, as well as the vehemence of the gale, appeared to be greater during the second phase of the storm than the first. These masses, many of which were as large as a pigeon's egg, were formed of a nucleus of snow or sleet, surrounded by transparent ice, and this again was succeeded by an opaque white layer, followed by a second coating of ice. In some of them I counted five alternations.

" In less than ten minutes the tornado had passed. The wind returned to a gentle breeze from the south-west, the clouds dispersed, and the weather became beautiful. All the phenomena,—the direction of the gale perpendicular to that in which the storm-cloud was advancing, and the sudden reversal of that direction,—seem to prove that it was a tornado, whose centre passed directly over the place of observation. It is evident, on comparing the direction of the wind when the whirl first reached this part of the town, with that of the progressive motion of the vortex itself, that its rotatory motion was *retrograde*, or in an opposite direction to that of the hands of a watch with its face upward. It is deserving of notice also, that in the northern hemisphere this is the invariable direction of the *cyclones*, or great revolving storms, to which the attention of meteorologists has been directed by Colonel Reid and Mr. Redfield. The late storm was, however, different from a cyclone, both in the dimensions of the vortex and in the causes from which it originated. The horizontal section of the cyclone where it meets the earth is often 500 miles in diameter; and the vortex is supposed to be the effect of two crossing currents of air, which generate a movement of rotation. In the tornado (to which species the late storm belonged) the vortex is of much smaller dimensions, and is produced by rapidly ascending currents of air, caused by the heating of a limited portion of the earth's surface under the action of the sun's rays. In the temperate zones, accordingly, it is never produced in winter.

" The evidence relating to the direction of the gale, and its changes, as it passed over the College Park, is very complete and satisfactory. In the park, and garden adjoining, nineteen trees were rooted up and prostrated; eleven of them being trees of large size. Of these ten have fallen from the south-east, or under the action of the first half of the gale, and nine from the north-west. Their bearings have been accurately taken; and the general result is, that the mean direction of the south-east gale, as indicated by that of the trees, is S. 56° E., and that of the north-west gale N. 53° W.

I believe that these results are even more accurate than those furnished by the anemometer; and they prove that in this locality the direction of the wind was exactly reversed, and, therefore, that the centre of the vortex passed over the College.

"A remarkable circumstance connected with the direction of the fallen trees is their great uniformity, the individual directions seldom differing more than 10° from the mean. This is an indirect evidence of the great violence of the gale; and it proves, moreover, that the transition from the south-east to the north-west wind was immediate. There is greater regularity in the direction of the trees fallen from the north-west than in those which have been blown down from the opposite quarter. This may have arisen partly from the greater violence of the gale in the former direction; but it is partly also due to the circumstance that the trees which fell from the north-west are generally larger and in a less inclosed portion of the ground. It may be mentioned also, that the trees which fell from the north-west generally lie to the southward of the others; there are, however, two large trees in the garden lying *side by side*, but in directions diametrically *opposed*.

"It has been stated that in the College Park the shifting of the wind amounted to 180°; and it has been inferred that the centre of the vortex passed over that spot. From what has been said as to the nature of the phenomenon, it will follow that in other localities, over which the vortex did not pass centrally, the wind must have shifted through different points of the compass, and through angles smaller in proportion to their distances from the centre. Thus, on the southern side of the line described by the centre of the vortex, the change of the wind should be from *south to west*, and on the northern side of the same line from *east to north*. We are not yet in possession of facts which bear upon this point; but from the limited dimensions of the vortex, and the consequent smallness of the distance necessary to produce such a variation, it is probable that evidence bearing upon it may be obtained. I shall only observe that, in seeking and comparing such evidence, care must be taken not to confound *eddies* arising from local obstructions with the general direction of the current.

" The hours of observation at the Magnetical Observatory are 7 A. M., 10, 1 P. M., 4, 7, 10. The observations of the barometer, and of the dry and wet thermometers, made at these hours on the day of the storm, are the following :—

Hour.	Barometer.	Dry Therm.	Wet Therm.
7 A. M.	29.944	49.5	47.4
10	29.952	54.7	50.5
1 P. M.	29.964	58.6	52.0
4	29.930	56.0	52.3
7	29.944	52.6	52.0
10	29.936	51.0	49.6

The fall of rain and melted hail in Trinity College during the storm amounted to 0·596 of an inch; but it is probable that the hail was driven out of the receiver of the gauge by the wind.

" It will be seen that the barometric fluctuation is small. It is stated, however, that a sudden and considerable fall of the barometer took place shortly before the storm. From the observations above given, at 1 and 4, P. M., it will be seen that the barometric equilibrium, if so disturbed, was soon restored.

" I have collected from the newspapers and other sources such information as I could obtain respecting the area of the city visited by the gale, but it is as yet incomplete. It appears, however, that the diameter of the vortex was not very different from the length of the city from north to south; the gale having been limited by the Circular-road in these two directions. Hail fell, however, abundantly beyond the limits of the gale. Thus, at the gardens of the Royal Dublin Society, at Glasnevin, the damage done by the hail was very great; but it was limited to the roofs of the houses, the hail having fallen perpendicularly. The amount of the rain and melted hail registered there was 1·7 inches in 35 minutes.

" Further information is wanting also to enable us to determine exactly the progressive movement of the centre of the vortex. We are informed by the newspapers that a storm similar to that which visited Dublin, although not so severe, took place at Mullingar, about an hour and a half previously. If this be the same storm, the direction of the progressive movement must have been nearly from west to east, and its velocity about thirty miles an hour. This direction accords with that given by the observed limits of the storm on the northern and southern sides of the city; but it seems to have been modified, at the surface of the earth, by the lower current. The velocity of the rotatory movement was, of course, vastly greater than that of the progressive; but we have no direct measure of its amount.

" The damage done in Dublin has been principally in the destruction of glass caused by the hail; but many chimneys have been thrown down, and many roofs dismantled, by the gale. The estimated amount of the loss sustained, as ascertained by the Metropolitan Police, is £27,800. Many houses were struck by the lightning; but, happily, there was no loss of life from that cause.

" There seemed to have been a disturbance of electrical equilibrium, accompanied by rain, in many remote parts of Ireland on the same day."

Mr. Hogan communicated the following additional facts relative to the same phenomenon:

" In tracing the history of the remarkable hurricane of the 18th inst., we must distinguish between the direction of the wind where it was raging, and the prevailing current of air by which it was borne along from place to place. The latter seems to have been a gentle breeze from the west, not strong enough to prevent large hail-stones from falling perpendicularly. The hurricane itself was so violent that the largest trees were in a moment torn out of the ground and prostrated, and the hail was carried about in all directions, —even, in some instances, in opposite directions, in the same street, and at the same moment.

" All the damage done in the lawn of the Royal Dublin Society was by wind from the south-east. In Westmoreland-street it raged from the north-west; and a hand-cart was blown down the street and found inside the iron rails in front of the College, having, most probably, been carried over them. In the College Park trees were blown down by winds from both points, as stated by the President.

" I have been informed by an eye-witness that, during the hurricane, the wind blew violently down the river, and afterwards up the river with equal violence; and that, at the moment when the change of direction took place, he saw some boats, which were moored opposite Bachelor's-walk, lifted out of the water and capsized. I have been also informed, that lower down the river, ships were torn from their moorings, and carried away by the hurricane, which brought them back again when its direction changed. In short, there is abundant evidence that, in Dublin, the wind raged in every direction, and that the centre of the whirlwind passed over it. The hail and rain preceded the hurricane, which was not destructive to the windows until near the time when they ceased. This may account for the fact, that most of the windows were broken by hail coming only from two points of the compass.

" The centre of the whirlwind seems also to have passed over Mr. Journeaux's mill on the south bank of the Grand Canal, due west of Dublin. At this place a cart was carried up into the air, and thrown over a hedge into the Canal, with the shafts downwards, which were deeply imbedded in the bottom. Much damage was also done to the buildings of the mill.

" The centre of the hurricane also passed over Mount Armstrong, in the county of Kildare, the residence of Christopher Rynd, Esq., about eighteen miles due west of Dublin. I was at his house on the 19th of April, and saw the devastation committed on all sides of his premises, as well as the bare walls of an out-office, from which the roof had been carried in one mass into the air, and then dashed to the earth at a distance of 200 yards. The following is the substance of a written account of the occurrence by Mr. Rynd :

" ' The first appearance of change of weather was from distant thunder, and occasional flashes of lightning, at a quarter past 3 P. M. This continued about a quarter of an hour, when suddenly a terrific hail storm commenced, and lasted about ten minutes. Before it ceased a frightful rushing sound, like the escape of steam from a large steam engine, was heard; and then, just as the hail ceased, the hurricane commenced. My yard of offices and house form a perfect square, and, to the best of my belief, every side was simultaneously attacked; and one large new roof (indeed they were all new) was completely raised in a mass,—timber, ton-slates, and wall-plate,—and carried 200 yards into a field. There was no storm of wind at 300 yards on either side; it travelled in a narrow space, and caused no other damage worthy of notice in my neighbourhood.' "

Mr. Donovan read the following paper on the position in society of physicians amongst the Greeks and Romans:

"The condition of the physicians of ancient Greece and Rome has been a subject of controversy amongst writers on medical antiquities, some maintaining that they were all slaves, while others were of opinion that a limited number only were of the servile class. A passage in Suetonius' Life of Julius Cæsar has given occasion to his commentators to open the question; and some learned physicians, for the honour of their profession, have discussed it more extensively, and with much greater effect.